

DOCKET NO: 270429US0PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :
HANSULRICH REISACHER, ET AL : GROUP: 1793
SERIAL NO: 10/531,586 :
FILED: APRIL 18, 2005 : EXAMINER: SHUANGYI, A.
FOR: SOLID PIGMENT PREPARATION :
CONTAINING WATER-SOLUBLE
ANIONIC SURFACE ACTIVE
ADDITIVES THAT COMPRISE
CARBOXYLATE GROUPS

APPEAL BRIEF

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

This is an appeal to the Board of Patent Appeals and Interferences under 35 U.S.C. § 134 from the November 20, 2008, final rejection of Claims 7-9 and 11-16 of Application 10/531,586, filed April 18, 2005. A Notice of Appeal was timely filed April 20, 2009, with a request for two months extension of time.

STATEMENT OF REAL PARTY IN INTEREST

The real party of interest in this appeal is BASF AKTIENGESELLSCHAFT, having an address of 67056 Ludwigshafen, Allemagne, Germany.

STATEMENT OF RELATED APPEALS AND INTERFERENCES

Appellant/Applicant, Appellant/Applicant's legal representative, and assignee, are aware of no appeals, interferences, judicial proceedings, or cases that are related to, directly affect or would be directly affected by, or have a bearing on the decision of the Board of Patent Appeals and Interferences in this appeal.

STATEMENT OF JURISDICTION

The Board of Patent Appeals and Interferences (Board) has jurisdiction under 35 U.S.C. § 134. This is an appeal to the Board from the November 20, 2008, final rejection of Claims 7-9 and 11-16 of Application 10/531,586, filed April 18, 2005. A Notice of Appeal was timely filed April 20, 2009, with a request for two months extension of time. This Appeal Brief is timely filed July 20, 2009, with a request for one month extension of time.

STATUS OF CLAIMS

Claims 7-9 and 11-16 are pending in the application.

Claims 1-6 and 10 have been canceled.

Claims 7-9 and 11-16 are finally rejected.

Claims 7-9 and 11-16 are appealed.

The final rejections of Claims 7-9 and 11-16 are herein appealed.

STATUS OF AMENDMENTS

No amendments to Claims 7-9 and 11-16 have been filed subsequent to the final Office Action of November 20, 2008. In an Advisory Action dated April 14, 2009, the Examiner indicated that Applicant's request for reconsideration filed February 26, 2009, "has

been considered but does NOT place the application in condition for allowance” and acknowledged a telephone interview of February 23, 2009.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The claimed subject matter is directed to solid pigment preparations that are formulated by combining (A) from 60 % to 95 % by weight of at least one pigment; (B) from 5 % to 40 % by weight of at least one water-soluble anionic surface-active material selected from the group consisting of homo- and copolymers of ethylenically unsaturated monocarboxylic acids and/or ethylenically unsaturated dicarboxylic acids with or without vinyl monomers which have no acid function, alkoxylation products of these homo- and copolymers, and salts of these homo- and copolymers and their alkoxylation products; and (C) from 0 % to 20 % by weight of at least one nonionic surface-active additive based on polyethers (Spec., p. 1, ll. 3-13; Claims Appendix, Claims 7 and 16).

The present invention is also directed to a process for producing the claimed pigment preparations which comprises wet-comminuting pigment (A) in aqueous suspension in the presence of some or all of component (B) and optional component (C) and drying the suspension. Drying may optionally occur after the remainder of component (B) and optionally component (C) have been added (Spec., p. 3, ll. 12-15; Claim 12).

The present invention is also directed to a process for pigmenting macromolecular organic and inorganic materials by incorporating the claimed pigment preparations in these materials by stirring or shaking the substances together (Spec., p. 3, ll. 16-18; Claim 13).

The present invention is additionally directed to a process for pigmenting plastics by incorporating the claimed pigment preparations into plastics by extruding, rolling, kneading or grinding of components together (Spec., p. 3, ll. 19-21; Claim 15).

GROUND OF REJECTION TO BE REVIEWED ON APPEAL

(1) The solid pigment preparations and production processes of Claims 7, 11, 13, and 15 stand rejected under 35 USC 103(a) as obvious over Takahashi et al, U. S. Patent 4,234,466.

(2) The solid pigment preparation of dependent Claim 8 stands rejected under 35 USC 103(a) as obvious over Takahashi et al, U. S. Patent 4,234,466.

(3) The solid pigment preparation of dependent Claim 9 stands rejected under 35 USC 103(a) as obvious over Takahashi et al, U. S. Patent 4,234,466, in view of Sommer et al, U. S. Patent 5,112,404.

(4) The process for producing the pigment preparations of Claims 12 and 14 stand rejected under 35 USC 103(a) as obvious over Takahashi et al, U. S. Patent 4,234,466

(4) The solid pigment preparation of independent Claim 16 stands rejected under 35 USC 103(a) as obvious over Takahashi et al, U. S. Patent 4,234,466.

ARGUMENT

1. Rejection of Claims 7, 11, 13, and 15 under 35 U.S.C. 103 over Takahashi

Claims 8, 9, 12 and 16 are argued separately from Claims 7, 11, 13, and 15. Claim 8 includes additional particle size and surface area limitations. Claim 9 requires additive (C) and further limits the proportions of additives (A) and (B). Claims 12 and 14 include process limitations which require separate consideration from Claim 7. All arguments in this appeal were previously presented to the Examiner in Applicant's responses to dated August 14, 2008, and February 26, 2009.

Appellants again point out, as is evident from the language of present Claim 7, that the claimed pigment preparation is fundamentally a combination of at least pigment (A) and at least one water-soluble anionic surface active agent (B). Optionally, at least one non-ionic

surface-active agent (C) can be present in the composition. On the other hand, the Takahashi et al patent discloses no such combination of particulate pigment with at least one water-soluble anionic surface active agent. For instance, Takahashi et al discloses a process in column 2, lines 25 *et seq.*, for the preparation of a solid pigment composition that is formed by subjecting a liquid composition comprising at least one ethylenically unsaturated compound, at least one resin dissolved or dispersed therein, and at least one pigment dispersed therein, to suspension or bulk polymerization. Unsaturated monomer polymerization in the presence of the resin and pigment is described at columns 4 and 5 of the patent. Accordingly, since it is clear that the pigment was present in the solution or suspension as the monomer was being polymerized, with resin also being present, the pigment component is encapsulated within the organic matrix of resin and polymerized monomer. Thus, the appropriate question to ask is not whether applicant provides any factual evidence to show that the ethylenically unsaturated monomer in the resin is not water soluble, but rather whether the pigment is encapsulated in a water-soluble anionic surface-active organic matrix that is formed when the monomer polymerizes in the presence of the resin?

The discussion of the reference in Example 1 of Takahashi et al is consistent with the above discussed disclosure of the patent. That is, Example 1 initially describes a polymer prepared from a mixture of methyl methacrylate, styrene, isobutyl methacrylate, butyl acrylate and methacrylic acid and then an admixture of that copolymer with a monomer mixture of methyl methacrylate, styrene, isobutyl methacrylate, glycidyl methacrylate and butyl acrylate. The titanium based pigment identified as Titanium White is dispersed in the fluid medium of resin in the mixture of monomers and 2,2'-azobis-2,4-dimethylvalero-nitrile is the added radical initiator. Polymerization occurs in an aqueous medium that contains hydroxypropylmethylcellulose as a dispersing aid. After polymerization the dispersed phase is collected by filtration, washed with water and dried. A "solid pigment dispersed

composition” in the for of beads is obtained. These beads are crushed into a powder. Clearly, and obviously, the pigment particles are encapsulated or confined within a solid of the powdered mass.

As to the statement by the Examiner relating to a surface washing of resin, appellants observe that there is no such thing after polymerization of an “ethylenically unsaturated polymerizable polymer.” In the polymerization step, the monomer in the dispersion is polymerized so that there is no “polymerizable polymer” that is washed out of the wet dispersed phase obtained after polymerization.

The Examiner also questions the washing out of “the compound” from the resin matrix. However, the Examiner has not considered that the material obtained after polymerization is aqueous dispersed polymer containing material that is initially filtered to separate a wet polymer containing mass from the bulk of the water in the reaction medium. The polymer itself is not water-soluble. After the wet polymerized mass is obtained, it is this material that is washed with water. Obviously, any water-soluble material that may be present in the mass is washed away from the mass. Stated another way, the mass washed away is not the hardened particulate polymer mass. In the last processing step, the wet, washed mass is simply dried to give a solid pigment dispersed composition which does not comprise water-soluble anionic surface active polymer. Accordingly, the teachings of Takahashi et al do not meet the limitations of present Claim 1.

As to the matter of spray drying which the Examiner mentions in the comments of the Advisory Action and the manner in which it is used in the present invention, the Examiner is missing the point which appellants are making. That is, in Takahashi et al, as appellants have pointed out above, the wet polymer mass obtained upon filtration is washed with water prior to being dried (by whatever method desired). This washing step will remove water soluble materials. This means that for any given preparation which may still contain a water-soluble

components, these water-soluble components are washed away from the pigment in the washing step. Note the supporting statement at column 5, lines 26 and 27, of the patent where product is isolated, followed by washing and then drying, to give the solid pigment. That solid pigment is free of any water-soluble anionic surface active component. The manner in which the washed polymeric material is dried appears to be immaterial. On the other hand, in the process of the present invention, the procedure described in Takahashi et al is not employed. Rather, an aqueous suspension of pigment particles (A) and components (B) and (C) is dried by any one of several techniques. No filtration of an aqueous polymer dispersion followed by washing of the wet mass obtained with water is employed or should be employed.

That the process of the present invention is quite different is apparent, for instance, from the disclosure on page 14 of the specification. There, a pigment dispersion of pigment particles and components (B) and (C) in water is formed. In order to obtain the desired dried pigment preparation, the dispersion is dried in a spray drying apparatus. There are no process steps of filtration and water washing of a pigmented polymeric mass that are employed in the present invention. Further, other methods of drying may be used such as spray granulation, fluidized bed drying, and the like. Spray drying of the pigment dispersion is not a critical aspect of the claimed process.

2. Rejection of Claim 8 under 35 U.S.C. 103 over Takahashi

The Takahashi et al patent nowhere shows or reasonably suggests a solid pigment dispersion preparation which is in the form of granules having an average particle size ranging from 50 to 5000 μm and a BET surface area of $\leq 15 \text{ m}^2/\text{g}$ as required in Claim 8.

3. Rejection of Claims 9 under 35 U.S.C. 103 over Takahashi in view of Sommer

The Takahashi et al patent nowhere shows or suggests a solid pigment dispersion preparation comprising 60 to 85 % by wt of pigment (A), 5 to 20 % by wt of additive (B), and 5 to 15 % by wt of additive (C) as Claim 9 requires. The reference only states that the liquid composition of the reference contains from 1 % to 70 % by wt of pigment particles. This range does not suggest the percentage ranges for components (A), (B), and (C) of the present claims, especially when the reference does not appear to disclose any of the amounts of monomer mixture and resin in the composition. Claim 9 is believed to stand separately patentable.

The Sommer et al patent discloses a pigment formulation comprising at least one organic pigment combined with a melamine compound having formula I, and optionally an anionic, cationic or nonionic surface active agent and customary additives. The compound of formula I is discussed at the bottom of column 10 over into column 11 where it is stated that the compound described in the examples is either applied to pigments or used for dispersing pigments in stoving lacquer systems. As components of stoving lacquer systems, lacquer systems based on alkyd-melamine resin appear to be well-known known. The result in the case of the Sommer et al patent is a lacquered pigment formulation of reduced viscosity. The pigment system described in Takahashi et al is not in any way compatible in function, formulation, or operation to the pigment formulation described by Sommer et al which at its foundation is a combination of a pigment, preferably organic, and a melamine compound of the specific structure of formula (I), with the presence of a surfactant of any category being merely optional.

As to the combination of the two references as the basis for the Examiner's obviousness rejection, and the Examiner's comments notwithstanding, the fact is that the pigment composition Sommer et al formulates is made for the specific use as a stoving

lacquer, while Takahashi et al neither shows nor suggests such a capability for its pigment dispersion. A critical ingredient in the composition of Sommer et al is the melamine compound component which provides the necessary compatibility as a dispersing aid required for a pigment in stoving lacquers. There is no teaching or suggestion of this property in Takahashi et al. Accordingly, the fact that the composition of the Sommer et al patent may contain any one of various kinds of surfactant components, which may or may not be an anionic type of surfactant, would not have lead the ordinary artisan to modify the composition of Sommer et al by omitting the melamine compound component and incorporating an anionic surfactant component in the pigment formulation. In fact, it is clear that the Examiner improperly relied on the teachings of the present invention in hindsight to reconstruct the presently claimed composition.

4. Rejection of Claims 12 and 14 under 35 U.S.C. 103 over Takahashi

Claims 12 and 14 are directed to a process for producing pigment preparations by wet-comminuting pigment (A) in an aqueous suspension in the presence of some or all of additive (B) and optionally (C), and then drying the suspension, optionally, after the remainder of additive (B) and optional additive (C) has been added. Takahashi et al does not show or reasonably suggest a procedure in which pigment particles are wet comminuted in an aqueous system as required by the process Applicant presently claims.

5. Rejection of Claim 13 under 35 U.S.C. 103 over Takahashi

Present Claim 13 is directed to a process for pigmenting macromolecular organic and inorganic materials by incorporating a pigment preparation as claimed in claim 7 in an organic or inorganic material by stirring or shaking the substances together. As indicated above, not only is the pigment material of present Claim 7 not shown or reasonably suggested

by Takahashi et al, but there cannot be any teaching or suggestion in the reference of a macromolecular organic and inorganic material that is pigmented with the material of present Claim 7.

6. Rejection of Claim 15 under 35 U.S.C. 103 over Takahashi

While Takahashi et al discloses that the pigment material can be incorporated in a plastic material (col 8, lines 1-4) as required by Claim 15, since the reference does not teach or reasonably suggest the solid pigment preparation of Claim 7, the process of using that solid pigment preparation is not suggested.

7. Rejection of Claim 16 under 35 U.S.C. 103 over Takahashi

The solid pigment preparation of Claim 16 is distinct from the products disclosed in the Takahashi et al patent, not only for the reasons advanced above, but also because the limiting phrase “consisting essentially of” excludes Takahashi’s polymerized monomer mixtures formed in the presence of a resin and Sommer’s melamine additive.

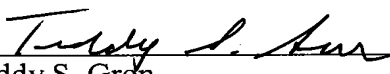
For the reasons stated herein, the Examiner’s final rejections of the claims on appeal are erroneous and properly should be REVERSED.

Respectfully submitted,

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CLAIMS APPENDIX

Claim 7 (Rejected): A solid pigment preparation, comprising:

- (A) from 60 % to 95 % by weight of at least one pigment;
- (B) from 5 % to 40 % by weight of at least one water-soluble anionic surface-active additive selected from the group consisting of homo- and copolymers of ethylenically unsaturated monocarboxylic acids and/or ethylenically unsaturated dicarboxylic acids with or without vinyl monomers comprising no acid function, alkoxylation products of these homo- and copolymers and salts of these homo- and copolymers and their alkoxylation products; and
- (C) from 0 % to 20 % by weight of at least one nonionic surface-active additive based on polyethers.

Claim 8 (Rejected): The solid pigment preparation as claimed in claim 7, which is in the form of granules having an average particle size ranging from 50 to 5000 μm and a BET surface area of $\leq 15 \text{ m}^2/\text{g}$.

Claim 9 (Rejected): The solid pigment preparation as claimed in claim 7, wherein the preparation is comprised of 60 to 85 % by wt of pigment (A), 5 to 20 % by wt of additive (B) and 5 to 15 % by wt of additive (C).

Claim 11 (Rejected): The solid pigment preparation as claimed in claim 7, wherein the preparation is granulated to a surface which has a surface area of $\leq 15 \text{ m}^2/\text{g}$.

Claim 12 (Rejected): A process for producing pigment preparations as claimed in claim 7, which comprises:

wet-comminuting pigment (A) in aqueous suspension in the presence of some or all of additive (B) and optionally (C) and then drying the suspension, optionally, after the remainder of additive (B) and optionally (C) has been added.

Claim 13 (Rejected): A process for pigmenting macromolecular organic and inorganic materials, which comprises:

incorporating pigment preparations as claimed in claim 7 in an organic or inorganic material by stirring or shaking the substances together.

Claim 14 (Rejected): A process as claimed in claim 12, for pigmenting coatings, paints, inks, including printing inks, and finish systems where the liquid phase comprises water, organic solvents or mixtures of water and organic solvents.

Claim 15 (Rejected): A process for pigmenting plastics, which comprises:
incorporating pigment preparations as claimed in claim 7 into plastics by extrusion, rolling, kneading or grinding of the substances.

Claim 16 (Rejected): A solid pigment preparation, consisting essentially of:

- (A) from 60 % to 95 % by weight of at least one pigment;
- (B) from 5 % to 40 % by weight of at least one water-soluble anionic surface-active additive selected from the group consisting of homo- and copolymers of ethylenically unsaturated monocarboxylic acids and/or ethylenically unsaturated dicarboxylic acids with or without vinyl monomers comprising no acid function, alkoxylation products of these homo-

and copolymers and salts of these homo- and copolymers and their alkoxylation products;
and

(C) from 0 % to 20 % by weight of at least one nonionic surface-active additive based on polyethers.

CLAIM SUPPORT AND DRAWING SECTION

There are no drawings associated with the Application on Appeal. Support for Claims 7 and 12 on appeal appears in the Specification at page 3, lines 1-15.

MEANS OR STEP PLUS FUNCTION ANALYSIS SECTION

There are no claims with means or step plus function language on appeal.

EVIDENCE SECTION

No evidence has been submitted under the provisions of 37 CFR 1.130, 37 CFR 1.131, or 37 CFR 1.132 or relied upon in support of the patentability of the claims in this appeal.

RELATED PROCEEDINGS APPENDIX

Appellant/Applicant, Appellant/Applicant's legal representative, and assignee, are aware of no appeals, interferences, judicial proceedings, or cases that are related to, directly affect or would be directly affected by, or have a bearing on the decision of the Board of Patent Appeals and Interferences in this appeal.